

BUILDING STANDARDS COMMISSION

2525 Natomas Park Drive, Suite 130
Sacramento, California 95833-2936
(916) 263-0916 FAX (916) 263-0959



April 18, 2011

Michele Olsen, City Clerk
City of Orinda
22 Orinda Way
Orinda, CA 94563

Dear Ms. Olsen:

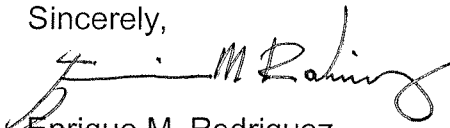
This letter is to acknowledge receipt on April 15, 2011 of the City of Orinda submittal pertaining to Ordinance No. 11-01 with findings and is acceptable for filing. Your filing attests to your understanding that according to Health and Safety Code Section 17958.7 no modification or change to the California Building Standards Code shall become effective or operative for any purpose until the finding and the modification or change have been filed with the California Building Standards Commission (the Commission).

This letter attests only to the filing of these local modifications with the Commission, which is not authorized by law to determine the merit of the filing.

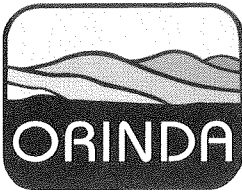
As a reminder, local modifications are specific to a particular edition of the Code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the Code is published. In addition, should you receive Fire Protection District ordinances for ratification, it is required to submit the ratified ordinances to the Department of Housing and Community Development [H&SC Section 13869.7(c)], attention State Housing Law Program Manager, rather than the Commission.

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,


Enrique M. Rodriguez
Associate Construction Analyst

cc: Chron
Local Filings



22 orinda way • orinda • california • 94563

April 14, 2011

Building Standards Commission
2525 Natomas Park Drive
Suite 130
Sacramento, CA 95833

Re: City of Orinda's Modifications to the 2010 CA Building Standards Code

To Whom It May Concern:

On April 12, 2011, the City Council of the City of Orinda adopted Ordinance No. 11-01 and passed Resolution 15-11.

Ordinance 11-01 adopted as part of the Municipal Code of the City of Orinda the following: 2010 California Building Code; the 2010 California Residential Code; the 2010 California Green Building Standards Code; the 2010 California Fire Code; the 2010 California Plumbing Code; the 2010 California Mechanical Code; and the 2010 California Electrical Code. Pursuant to Cal. Health & Safety Code Section 18958, Ordinance 11-01 modifies these codes.

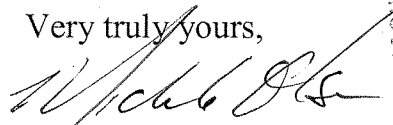
As required by Cal. Health & Safety Code Section 17958.7, Resolution 15-11 is available as a public record. It makes express findings that these modifications are reasonably necessary because of local climatic, geological or topographical conditions.

Pursuant to Cal. Health & Safety Code Section 17958.7, I am filing the following enclosed documents with the California Building Standards Commission:

1. A copy of Ordinance 11-01;
2. A copy of Resolution 15-11.

If you have any questions about this matter, please feel free to contact me.

Very truly yours,


Michele Olsen
City Clerk, City of Orinda

General Information
(925) 253-4200 (ph)
(925) 254-9158 (fax)

Administration
(925) 253-4220 (ph)
(925) 254-2068 (fax)

Planning
(925) 253-4210 (ph)
(925) 253-7719 (fax)

Parks & Recreation
(925) 254-2445 (ph)
(925) 253-7716 (fax)

Police
(925) 254-6820 (ph)
(925) 254-9158 (fax)

Public Works
(925) 253-4231 (ph)
(925) 253-7699 (fax)

BEFORE THE CITY COUNCIL OF THE CITY OF ORINDA

AN ORDINANCE ADOPTING THE)
2010 CALIFORNIA BUILDING,)
CALIFORNIA RESIDENTIAL,)
CALIFORNIA GREEN BUILDING)
STANDARDS, FIRE, PLUMBING,)
ELECTRICAL, AND)
MECHANICAL CODES WITH) ORDINANCE NO. 11- 01
MODIFICATIONS FOR LOCAL
CONDITIONS

The City Council of the City of Orinda DOES ORDAIN as follows:

SECTION 1. The City Council of the City of Orinda finds that:

1. The State of California has adopted the 2010 California Building Code (California Code of Regulations, Title 24, Part 2, Volumes 1 and 2, California Building Standards Commission, based upon the 2009 International Building Code as published by the International Code Council); the 2010 California Residential Code (California Code of Regulations, Title 24, Part 2.5, California Building Standards Commission as published by the International Code Council); the 2010 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11, California Building Standards Commission as published by the International Code Council) ("CALGreen"); the 2010 California Fire Code (California Code of Regulations, Title 24, Part 9, based on the 2009 International Fire Code as published by the International Code Council) ("Fire Code"); the 2010 California Plumbing Code (California Code of Regulations, Title 24, Part 5, based on the 2009 Uniform Plumbing Code as published by the International Code Council) ("Plumbing Code"); the 2010 California Mechanical Code (California Code of Regulations, Title 24, Part 4, based on the 2009 Uniform Mechanical Code as published by the International Code Council) ("Mechanical Code"); the 2010 California Electrical Code (California Code of Regulations, Title 24, Part 3, based on the 2008 National Electrical Code as published by the International Code Council) ("Electrical Code"). These Codes shall hereinafter be referred to collectively as the "Building Codes".

2. On March 15, 2011, pursuant to California Government Code Section 50022.3, the City Council of Orinda conducted a first reading of this ordinance adopting the Building Codes by title only and scheduled a public hearing on the adoption of the Building Codes to be held April 12, 2011.

3. At least 15 days prior to public hearing, pursuant to California Government Code Section 50022.6, at least one copy of the primary codes certified as true

copies by the legislative clerk were filed with the legislative clerk for public inspection.

4. At least 14 days prior to public hearing, pursuant to California Government Code Sections 50022.3 and 6066, a notice was published in a newspaper of general circulation stating the time and place of the April 12, 2011 public hearing and including a description the legislative body deemed sufficient to give notice of the purpose and subject matter of said ordinance. The notice informed the public that copies of the primary codes considered for adoption were on file with the clerk of the legislative body and open for public inspection.

5. In the week preceding the public hearing, pursuant to California Government Code Sections 50022.3 and 6066, a second notice identical to the first was filed in a newspaper of general circulation.

6. On April 12, 2011, pursuant to California Government Code Section 50022.4, a public hearing was held. Following public testimony and consideration, the City Council of Orinda found adoption of the California Building Standards Codes was in the public interest. Except as to the additions, deletions and amendments hereinafter noted, the Building Codes are hereby adopted and made a part hereof, the same as if fully set forth in this Article, and shall be the Building Regulations of the City.

8. The additions, deletions, modifications and amendments hereinafter noted are deemed reasonably necessary because of local climatic, geological, or topographical conditions pursuant to Government Code Section 17958.5. Express findings that these modifications to the Building Code are reasonably necessary will be filed with the California Building Standards Commission in accordance with California Health and Safety Code Section 17958.7 before this ordinance takes effect.

9. While the ordinance codified in this Article is in force, a true copy of the Uniform Codes shall be kept for public inspection in the office of the City Building Official and a reasonable supply of the Building Code shall be available for public purchase in the office of the City Clerk in accordance with Government Code Section 50022.6.

SECTION 2. Chapter 8.20 is repealed in its entirety and a new Chapter 8.20, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 3. Chapter 15.08 is repealed in its entirety and a new Chapter 15.08, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 4. Chapter 15.09 – California Residential Code is a new Chapter, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 5. Chapter 15.10 – California Green Building Standards Code is a new Chapter, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 6. Chapter 15.12 is repealed in its entirety and a new Chapter 15.12, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 7. Chapter 15.16 is repealed in its entirety and a new Chapter 15.16, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 8. Chapter 15.20 is repealed in its entirety and a new Chapter 15.20, as shown on Appendix A attached to this ordinance and incorporated by this reference, shall be added to the Orinda Municipal Code.

SECTION 9. This ordinance is consistent with the Orinda General Plan. This ordinance will not have a significant adverse effect on the environment as defined in the California Environmental Quality Act.

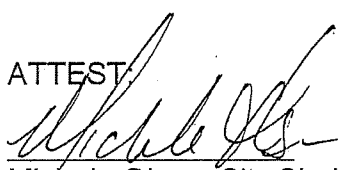
SECTION 10. This ordinance becomes effective 30 days after adoption.


SECTION 11. The City Clerk shall either (a) have this ordinance published once within 15 days after adoption in a newspaper of general circulation or (b) have a summary of this ordinance published twice in a newspaper of general circulation, once 5 days before its adoption and again within 15 days after adoption.

The foregoing ordinance was introduced at a regular meeting of the City Council of the City of Orinda held on March 15, 2011, and was adopted and ordered published at a regular meeting held on April 12, 2011, by the following vote:

AYES:	COUNCILMEMBERS: Orr, Severson, Worth and Mayor Smith
NOES:	COUNCILMEMBERS: None
ABSENT:	COUNCILMEMBERS: Glazer (Excused)
ABSTAIN:	COUNCILMEMBERS: None

ATTEST:


Michele Olsen, City Clerk


Victoria Smith, Mayor

BEFORE THE CITY COUNCIL OF THE CITY OF ORINDA

In the Matter of:

RESOLUTION making findings of fact)
regarding the need for the modifications to)
the provisions of the 2010 California)
Building Standards Code made in the)
Orinda City Code.)
)

RESOLUTION NO. 15-11

WHEREAS, California Health and Safety Code Section 18938 makes certain provisions published in the California Building Standards Code pursuant to Health and Safety Code Section 17922 applicable to all occupancies throughout the state and effective one hundred eighty days after publication by the California Building Standards Commission ("Commission"), or at a later date established by the Commission; and

WHEREAS, Health and Safety Code Section 17958 permits cities to amend the requirements of the California Building Standards Code in accordance with Health and Safety Code Sections 17958.5 and 17958.7; and

WHEREAS, Health and Safety Code Section 17958.5 permits cities in adopting provisions of the California Building Standards Code to make such changes in such provisions as the city determines, pursuant to Health and Safety Code Section 17958.7, are reasonably necessary because of local climatic, geological, or topographical conditions; and

WHEREAS, Health and Safety Code Section 17958.7 requires that a city, before making changes pursuant to Health and Safety Code Section 17958.5, must make an express finding that such changes are reasonably necessary because of local climatic, geological, or topographical conditions; and

WHEREAS, under Health and Safety Code Section 17958.7, changes pursuant to Health and Safety Code Section 17958.5 may not become effective until the required findings, and the changes, have been filed with the California Building Standards Commission; and

WHEREAS, Government Code Section 50022.2 permits enactment of city ordinances that adopt codes or statutes, including codes of the State of California, by reference; and

WHEREAS, the City Council of the City of Orinda ("City Council") intends to adopt an ordinance adopting by reference certain provisions of the 2010 California Building Standards Code; and

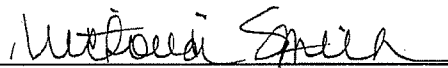
WHEREAS, the City Council has reviewed Appendix A, which sets forth the reasons for the proposed changes to the California Building Standards Code contained in Ordinance 11-01;

NOW, THEREFORE, BE IT RESOLVED that the City Council does hereby declare and find that the changes to the provisions of the California Building Standards Code set forth in Ordinance 11-01 are reasonably necessary because of local climatic, geological, or topographical conditions in accordance with Health and Safety Code Section 17958.7, as set forth in Appendix 1 to this Resolution; and

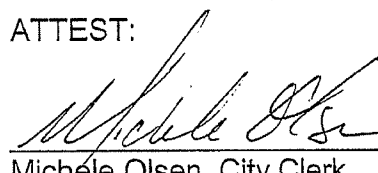
BE IT FURTHER RESOLVED that a copy of this Resolution, including Appendix 1, shall be filed with the California Building Standards Commission in accordance with Health and Safety Code Section 17958.7.

PASSED AND ADOPTED by the City Council of the City of Orinda at a meeting held on April 12, 2011, by the following vote, to wit:

AYES:	COUNCILMEMBERS: Orr, Severson, Worth, and Mayor Smith
NOES:	COUNCILMEMBERS: None
ABSENT:	COUNCILMEMBERS: Glazer (Excused)
ABSTAIN:	COUNCILMEMBERS: None


Victoria Smith, Mayor

ATTEST:


Michele Olsen, City Clerk

APPENDIX A

Chapter 8.20 - FIRE SAFETY

8.20.010 - Adoption.

- A. The fire code of the city is the 2010 California Fire Code (California Code of Regulations, Title 24, Part 9 (based on the 2009 International Fire Code)) as amended by the changes, additions, and deletions set forth herein.
- B. The 2010 California Fire Code (CFC) with the changes, additions, and deletions set forth in this chapter and in other chapters of this title and Title 15 are adopted by this reference as though fully set forth.
- C. At least one copy of this fire code is now on file with the Building Inspection Department, and the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- D. As of the effective date of the ordinance codified in this chapter, the provisions of the fire code are controlling and enforceable within the city.
- E. The provisions of this chapter are to be read in conjunction with the provisions of Title 15, Chapter 15.08 "Building Code" of this code which adopts and modifies the 2010 California Building Code (California Code of Regulations, Title 24, Part 2, Volumes 1 and 2 (based on the 2009 International Building Code)).

8.20.020 - Purpose.

- A. This chapter regulates the use of construction materials and requires the installation of specific fire safety features in new construction in the city. Except as set forth in subsection B of this section, Sections 8.20.080(A), 8.20.040(G) and 8.20.090 of this chapter do not apply to existing structures.
- B. This chapter does not require that an existing building be retrofitted to meet its requirements unless:
 - 1. An exception otherwise granted by this chapter is exceeded; or
 - 2. An addition or demolition and replacement, exceeds fifty (50) percent of the floor area of an existing building; or
 - 3. Fifty (50) percent or more of the building is destroyed by fire, earthquake, or other natural or man-made disaster.
- C. This chapter implements the safety element of the city's General Plan to:
 - 1. Coordinate the review of development applications between the city and the Moraga-Orinda Fire District; and
 - 2. Regulate the design of buildings, siting and vegetation management to enhance maximum fire prevention and protection.
- D. To the extent that a provision of this chapter conflicts with a provision of the 2010 California Building Standards Code, or any sections of the Orinda Municipal Code which have adopted the above code by reference and which have been adopted by reference into this code, this chapter shall prevail. This

chapter regulates building construction in the city due to the characteristics of the city's climate, topography and geology which necessitate variations from the 2010 California Building Standards Code.

8.20.030 - Automatic fire extinguishing systems in new buildings.

- A. Automatic sprinkler systems. Section 903 of CFC Chapter 9 (Fire Protection Systems) is adopted unless otherwise amended as follows:

1. CFC Section 903.1.1, Alternative protection, is deleted in its entirety.
2. CFC 903.2 is amended to read as follows:

903.2 Where required. Approved automatic sprinkler systems shall be installed in new buildings regardless of square footage or type of construction.

Exceptions:

- a. Systems which are required to mitigate deficiencies shall be installed in accordance with requirements as deemed necessary by the fire code official.
- b. Ancillary structures less than 750 square feet not intended to be used for residency.

903.2.1 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exceptions:

1. See California Fire Code Section 903.2.8, Exceptions 1 through 4.
2. Detached Group U private garages accessory to a Group R-3 occupancy.

- B. 903.3.5 Water supplies. CFC Section 903.3.5 Water supplies is amended to add subsection 903.3.5.3 as follows:

903.3.5.3 Non-permissible water supply storage. Swimming pools, ponds, and underground cisterns shall not be considered water storage for the purposes of CFC Section 903.3.5.

Exception:

Secondary water supplies for fire pumps in commercial buildings where the primary water supply is provided by a municipal water purveyor.

8.20.040 - Automatic fire extinguishing systems in existing buildings.

- A. Existing buildings. CFC Section 903.6, Existing buildings, is amended by adding or amending Sections 903.6.2, 903.6.3, 903.6.4 and 903.6.4.1 as follows:

903.6 Existing buildings. The provisions of this section are intended to provide a reasonable degree of safety in existing structures not complying with the minimum

requirements of the *California Building Code* by requiring installation of an automatic fire-extinguishing system.

903.6.2 Group I-2. An Automatic sprinkler system shall be provided throughout Group I-2 fire areas where required in Chapter 46.

903.6.3 Change in occupancy classification. Existing non-residential buildings which undergo a change in occupancy classification to a higher hazard occupancy shall require the entire building be protected by an automatic sprinkler system installed in accordance with Section 903.3. Relative hazard categories of occupancy groups shall be as shown in Table 903.6.3. The requirements of Section 903.2 shall not be required when a change of occupancy classification is made to an equal or lesser hazard category.

TABLE 903.6.3

Hazard Category 1 (highest hazard)	H, I, A, R-1, R-2, L
Hazard Category 2	S-1, F-1
Hazard Category 3	E, F-2, S-2
Hazard Category 4 (lowest hazard)	B, M, U, R-3

903.6.4 Additions, alterations, or remodels of Group R-3 occupancies. An automatic fire sprinkler system shall be provided throughout R-3 occupancy where one of the following conditions occurs:

- a) When the aggregate of the additions, alternations and remodels exceeds 50% of the floor area of an existing building and the total fire area exceeds 3,500 square feet.
- b) When fire, earthquake or other man-made disaster destroys 50% or greater of the building the entire building shall be protected by an automatic sprinkler system.
- c) When two or more building permits are issued in a five year period, after April 12, 2011, where the aggregate of the additions and alterations exceed 50% of the square footage of the building at the time of the first permit and the total fire area exceeds 3,500 square feet.

8.20.050 - Automatic fire extinguishing systems in existing buildings.

Section 907.2.11.2.3 is added to Section 907.2.11.2 (Groups R-2, R-3, and R-4) of CBC Chapter 9 (Fire Protection Systems) to read:

907.2.11.2.3 In existing flat roof buildings, the installation of a smoke detector that complies with Sections 907.2.11 shall be required when a pitch roof is added on top of the existing flat roof and the solid seating of the flat roof is not removed.

8.20.060 - Definitions.

As used in this chapter:

"Finished grade" means the grade of the land after development of the site. This term pertains to the grade below the eave of a building where a fire ladder would be positioned to provide access to the roof.

"Fire district" means the Moraga-Orinda Fire District.

"Floor area" means the total horizontal area in square feet of each floor within the exterior walls of all buildings on a parcel, as measured from the outer surface of the exterior walls. Total floor area includes attached and detached primary and accessory buildings, garages, carport roof coverage, and floor space which is capable of being developed as habitable area.

"Hillside" means any property which has an average slope of thirty (30) percent or greater as calculated under Section 17.7.4 of the Orinda Municipal Code.

8.20.070 - Landscaping and access.

- A. Landscaping. Vegetation identified on the disallowed vegetation list maintained in the Planning Department is not allowed on a parcel within fifty (50) feet of a building.
- B. Structure Access. A walkway, path, stair or other approved access shall be provided from the street to the rear of the building to provide for fire district emergency access.

8.20.080 - Enforcement.

The city of Orinda's Fire Code (composed of the 2010 California Fire Code (California Code of Regulations, Title 24, Part 9) as modified by the Moraga-Orinda Fire District and by the City Council of the city of Orinda) shall be enforced by the Moraga-Orinda Fire District. See MOFD Ordinance 10-04 and Orinda City Council Resolution 08-11.

Chapter 15.08 - BUILDING CODE

15.08.010 - Adoption.

- A. The building code of this city is the 2010 California Building Code (California Code of Regulations, Title 24, Part 2, Volumes 1 and 2), the 2010 California Residential Code (California Code of Regulations, Title 24, Part 2.5), and the 2010 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), as amended by the changes, additions, and deletions set forth herein.

- B. The 2010 California Building Code (CBC) with the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth.
- C. The 2010 California Residential Code with the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth.
- D. The 2010 California Green Building Standards Code with the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth.
- E. At least one copy of this building code is now on file in the office of the City Clerk and the City Building Department; the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- F. As of the effective date of the ordinance codified in this chapter, the provisions of the building code are controlling and enforceable within the city.
- E. The provisions of this chapter are to be read in conjunction with the provisions of Title 8, Chapter 8.20 "Fire Safety" of this code which adopts and modifies the 2010 California Fire Code (California Code of Regulations, Title 24, Part 9 (based on the 2009 International Fire Code)).

15.08.020 - Automatic fire extinguishing systems in new buildings.

- A. Automatic sprinkler systems. Section 903 of CBC Chapter 9 (Fire Protection Systems) is adopted unless otherwise amended as follows:
 - 1. CBC Section 903.1.1, Alternative protection, is deleted in its entirety.
 - 2. CBC 903.2 is amended to read as follows:

903.2 Where required. Approved automatic sprinkler systems shall be installed in new buildings regardless of square footage or type of construction.

Exceptions:

- a. Systems which are required to mitigate deficiencies shall be installed in accordance with requirements as deemed necessary by the fire code official.
- b. Ancillary structures less than 750 square feet not intended to be used for residency.

903.2.1 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exceptions:

- 1. See California Building Code Section 903.2.8, Exceptions 1 through 4.
- 2. Detached Group U private garages accessory to a Group R-3 occupancy.

- B. 903.3.5 Water supplies. CBC Section 903.3.5 Water supplies is amended to add subsection 903.3.5.3 as follows:

903.3.5.3 Non-permissible water supply storage. Swimming pools, ponds, and underground cisterns shall not be considered water storage for the purposes of CBC Section 903.3.5.

Exception:

Secondary water supplies for fire pumps in commercial buildings where the primary water supply is provided by a municipal water purveyor.

15.08.030 - Automatic fire extinguishing systems in existing buildings.

- A. Existing buildings. CBC Section 903.6, Existing buildings, is amended by adding or amending Sections 903.6.2, 903.6.3, 903.6.4 and 903.6.4.1 as follows:

903.6 Existing buildings. The provisions of this section are intended to provide a reasonable degree of safety in existing structures not complying with the minimum requirements of the *California Building Code* by requiring installation of an automatic fire-extinguishing system.

903.6.2 Group I-2. An Automatic sprinkler system shall be provided throughout Group I-2 fire areas where required in Chapter 46.

903.6.3 Change in occupancy classification. Existing non-residential buildings which undergo a change in occupancy classification to a higher hazard occupancy shall require the entire building be protected by an automatic sprinkler system installed in accordance with Section 903.3. Relative hazard categories of occupancy groups shall be as shown in Table 903.6.3. The requirements of Section 903.2 shall not be required when a change of occupancy classification is made to an equal or lesser hazard category.

TABLE 903.6.3

Hazard Category 1 (highest hazard)	H, I, A, R-1, R-2, L
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Hazard Category 4 (lowest hazard)	B, M, U, R-3

903.6.4 Additions, alterations, or remodels of Group R-3 occupancies. An automatic fire sprinkler system shall be provided throughout R-3 occupancy where one of the following conditions occurs:

- (a) When the aggregate of the additions, alternations and remodels exceeds 50% of the floor area of an existing building and the total fire area exceeds 3,500 square feet.
- (b) When fire, earthquake or other man-made disaster destroys 50% or greater of the building the entire building shall be protected by an automatic sprinkler system.

- (c) When two or more building permits are issued in a five year period, after April 12, 2011, where the aggregate of the additions and alterations exceed 50% of the square footage of the building at the time of the first permit and the total fire area exceeds 3,500 square feet.

15.08.040 - Smoke detectors in flat roof buildings.

Section 907.2.11.5.1 is added to Section 907.2.11.5 (Existing Group R-3 Occupancies) of CBC Chapter 9 (Fire Protection Systems) to read:

907.2.11.5.1 In existing flat roof buildings, the installation of a smoke detector that complies with Sections 907.2.10 shall be required when a pitch roof is added on top of the existing flat roof and the solid seating of the flat roof is not removed.

15.08.050 - Address numbers.

Section 501.2 of CBC Chapter 5 (General Building Heights and Areas) is amended to read:

501.2 Address numbers. Approved numbers or addresses shall be provided for all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property. In addition, every new residential dwelling unit building shall be equipped with a lighted (illuminated) house number or address plainly visible and legible from the street or road fronting the property. As appropriate, the planning agency or City Building Official may grant exceptions to the illumination requirements when satisfied that the application of its requirements would impose an unreasonable hardship and expense for the owner and/or applicant due to special circumstances applicable to the involved new building(s) because of location, topography, or surroundings.

15.08.060 - Wood shakes or shingles.

Section 1406.5 is added to Section 1406 (Combustible Materials on the Exterior Side of Exterior Walls) of CBC Chapter 14 (Exterior Walls) to read:

1406.5 Wood shakes or shingles. Wood shakes or shingles used for exterior wall covering shall be fire treated unless there is a minimum of 10 feet from the exterior wall (including shakes or shingles) to the property line of all sides, except for any sides of exterior walls facing the street.

15.08.070 - Roof assemblies and rooftop structures.

Section 1505 (Fire Classification) of CBC Chapter 15 (Roof Assemblies and Rooftop Structures) is amended as follows:

The phrase "more than 50 percent of the total roof area" shall be replaced in every instance with the phrase "more than 25 percent of the total roof area."

15.08.080 - Modifications to ASCE 7.

- A. Section 1615A.1.7 ASCE 7, Section 12.8.1.1 of CBC Chapter 1614A (Structural Design) is amended to read:

Section 1614A.1.7 ASCE 7, Section 12.8.1.1. Modify ASCE 7 Section 12.8.1.1 by amending Equation 12.8-5 as follows:

$$C_s = 0.044 S_{DS} \geq 0.01 \text{ (12.8-5)}$$

where S_{DS} is the 5 percent damped design spectral response acceleration parameter at short periods as defined in Section 11.4.4 and I is the importance factor in Section 11.5.1.

- B. Section 1614A.1.32 ASCE 7, Section 12.12.3 is added to Section 1614A (Modifications to ASCE 7) of CBC Chapter 1614A (Structural Design), to read:

Section 1614A.1.32 ASCE 7, Section 12.12.3. Replace ASCE 7 Section 12.12.3 as follows:

12.12.3 Minimum Building Separation. All structures shall be separated from adjoining structures. Separations shall allow for the maximum inelastic response displacement (Δ_M). Δ_M shall be determined at critical locations with consideration for both translational and torsional displacements of the structure as follows:

$$\Delta_M = C_d \delta_{\max} \text{ (Equation 16-1)}$$

Where δ_{\max} is the calculated maximum displacement at Level x as defined in ASCE 7 Section 12.8.4.3, and C_d is the deflection amplification factor as defined in ASCE 7 Section 12.8.6.

Adjacent buildings on the same property shall be separated by at least a distance Δ_{MT} , where

$$\Delta_{MT} = \sqrt{(\Delta_{M1})^2 + (\Delta_{M2})^2} \quad \text{(Equation 16-2)}$$

And Δ_{M1} and Δ_{M2} are the maximum inelastic response displacements of the adjacent buildings.

Where a structure adjoins a property line not common to a public way, the structure shall also be set back from the property line by at least the displacement, Δ_M , of that structure.

Exception: Smaller separations or property line setbacks shall be permitted when justified by rational analysis.

15.08.090 - Soils and foundations.

- A. Section 1809.8 (Plain Concrete Footings) of CBC Chapter 18 (Soils and Foundations) is deleted.
- B. Section 1810.3.9.3 (Placement of reinforcement) of CBC Chapter 18 (Soils and Foundations) is amended by deleting Exception No. 3.

15.08.100 - Concrete.

- A. Section 1908.1 of CBC Chapter 19 (Concrete) is amended to read:
1908.1 General. The text of ACI 318 shall be modified as indicated in Sections 1908.1.1 through 1908.11.
- B. Section 1908.1.11 is added to Section 1908 (Modifications to ACI 318) of CBC Chapter 19 (Concrete), to read:
1908.1.11 Modify ACI 318 Section 14.8.3 and 14.8.4 by replacing equations (14-7), (14-8) and (14-9) as follows:

- 1. Modify equation (14-7) of ACI 318, Section 14.8.3 as follows:

I_{cr} shall be calculated by Equation (14-7), and M_a shall be obtained by iteration of deflections.

$$I_{cr} = \frac{E_s}{E_c} \left(A_s + \frac{P_u h}{f_p 2d} \right) (d - c)^2 + \frac{I_{se}^3}{3} \quad (14-7)$$

and the value E_s/E_c shall not be taken less than 6.

- 2. Modify ACI 318 Section 14.8.4 as follows:

14.8.4 - Maximum out-of-plane deflection, Δ_s , due to service loads, including $P\Delta$ effects, shall not exceed $l_o/150$ If M_a , maximum moment at mid-height of wall due to service lateral and eccentric loads, including $P\Delta$ effects, exceed $(2/3)M_{cr}$, Δ_s shall be calculated by Equation (14-8):

$$\Delta_s = \frac{2}{3} \Delta_{sw} + \frac{M_a - \frac{2}{3} M_{cr}}{M_a - \frac{2}{3} M_{cr}} \left(\Delta_u - \frac{2}{3} \Delta_{sw} \right) \quad (14-8)$$

If M_a does not exceed $(2/3)M_{cr}$, Δ_s shall be calculated by Equation (14-9):

$$\Delta_s = \left(\frac{M_a}{M_{cr}} \right) \Delta_{cr} \quad (14-9)$$

where:

$$\Delta_{cr} = \frac{5M_{cr}I_c^2}{48E_cI_g}$$

$$\Delta_n = \frac{5M_nI_c^2}{48E_cI_{cr}}$$

- C. Section 1909 (Structural Plain Concrete) of CBC Chapter 19 (Concrete) is deleted.
- D. Section 1910.1 of CBC Chapter 19 (Concrete) is amended to add the following sentences to the end of the first paragraph of Section 1910.1:
 Slabs shall have six inches by six inches by ten gauge wire mesh or equal at midheight. Slabs on ground with turned down footings shall have a minimum of one No. 4 bar at the top and bottom.
- E. 1. The following appendices are incorporated in the Orinda Building Code by reference: Appendix C, Appendix F, and Appendix I of the CBC.
 2. The following appendices are excluded from the Orinda Building Code by reference: Appendix A, Appendix B, Appendix D, Appendix E, Appendix G, Appendix H, Appendix J, and Appendix K of the CBC.

15.08.110 - Administration.

CBC Chapter 1 is amended by the provisions of other Chapters of Title 15 of this code and as follows:

- A. Sections 103, 109, 111, 112, 113, 114, and 116 of CBC Chapter 1 are deleted.
- B. Section 105.2 (Work Exempt from Permit) of CBC Chapter 1 is amended to provide that a building permit is not required for the following work:
 - 1. Retaining walls that are not more than three feet in height, measured from the top of the footing to the top of the wall, unless supporting a surcharge or ground slope exceeding 1:2 or impounding Class I, II, or III-A liquids.

2. All other work listed in Section 105.2 of CBC Chapter 1 is also exempt from a permit.

C. Section 107.1 (Submittal Documents) of CBC Chapter 1 is amended by deleting the exception.

D. Section 107.2.1 (Information on Construction Documents) of CBC Chapter 1 is amended to read:

107.2.1 Plans and specifications shall be drawn to scale on substantial paper or cloth and shall be sufficient clarity to indicate the location, nature and extent of the work proposed and to show in detail that it will conform to this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give the house and street address of the work and the name and address of the owner and of the person who prepared the plans. Plans shall include a plot plan showing the location of the lot corners as established on the ground, the elevation of the top and toe of cuts and fills, and the location of the proposed building and of every existing building on the property. Instead of detailed specifications, the City Building Official may approve references on the plans to a specific section or part of this code or other ordinances or laws.

E. Sections 107.2.2, 107.2.5, and 107.3 are not amended and remain in effect.

F. Section 110.1 (Inspections - General) is amended by adding the following to the end of the section:

At the time of first inspection by the City Building Official, property corners (including angle points) shall be identified with monuments in accordance with the legal description furnished with the application to build, sufficient to locate the proposed structure in relation to the lot lines, except that this requirement shall not apply to minor alterations or repairs to existing structures not affecting the exterior limits thereof, and construction of accessory buildings or structures of a building permit value of less than \$500. The plot plan required by Section 107.2.1 shall indicate the locations and identification of all property corner monuments. Property corner monuments shall consist of one of the following:

1. Redwood hub not less than two inches square and twelve inches long;

2. Galvanized iron pipe not less than one inch in diameter and thirty inches long filled with concrete; or

3. Other material of sufficient durability, placed as not to be readily disturbed, acceptable to the City Building Official.

Monuments shall be driven flush with the ground and tagged as required by the Land Surveyor Act (Business and Professions Code section 8772).

Chapter 15.09 – CALIFORNIA RESIDENTIAL CODE

15.09.010 - Amendments to CRC.

- A. The 2010 California Residential Code ("CRC") is amended by the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth. Section numbers used below are those of the 2010 California Residential Code.
- B. At least one copy of this residential code is now on file with the Building Inspection Department, and the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- C. As of the effective date of the ordinance, codified in this chapter, the provisions of the residential code are controlling and enforceable within the city.
- D. Sections R103, R108, R111, R112, R113, and R114 of CRC Chapter 1 are deleted.
- E. In Section R105.2 of CRC Chapter 1, subsection 3 of the paragraph exempting certain building work from the requirement to obtain a permit is amended to exempt the following retaining walls from the requirement to obtain a permit:
 - 3. Retaining walls that are not more than three feet in height, measured from the top of the footing to the top of the wall, unless supporting a surcharge or ground slope exceeding 1:2 or impounding class I, II, or III-a liquids.
- F. Section R403.1.3 of CRC Chapter 4 is amended to delete the exception.
- G. Section R404.1.4.1 of CRC Chapter 4 is amended to read:

R404.1.4.1 Masonry foundation walls. In addition to the requirements of Table R404.1.1 (1), plain masonry walls in buildings assigned to Seismic Design Category Do, D" or D2 shall comply with the seismic requirements of Section 1.17.4.4 of TMS 402, ACI 530, or ASCE 5.
- H. Section R404.1.4.2 of CRC Chapter 4 is amended to read:

Section R404.1.4.2 Concrete foundation walls. Concrete foundation walls in buildings assigned to Seismic Design Category Do, D), or D2 shall comply with ACI 318, ACI 332, or PCA 100.

Chapter 15.10 – CALIFORNIA GREEN BUILDING STANDARDS CODE

15.10.010 - Adoption, title and purpose.

- A. The California Green Building Standards code (CALGreen code), Part 11 of the California Building Standards Code in Title 24 is adopted with no changes, additions or deletions.

- B. As of the effective date of the ordinance codified in this chapter, the provisions of the CALGreen code are controlling and enforceable within the city.
- C. The purpose of this chapter is to cause a reduction in greenhouse gas emissions from buildings; promote environmentally responsible, cost-effective, healthier places to live and work; reduce energy and water consumption; and respond to the directives by the Governor.

Chapter 15.12 - ELECTRICAL CODE

15.12.010 - Adoption, title and purpose.

- A. The electrical code of the city is the 2010 California Electrical Code (California Code of Regulations, Title 24, Part 3 as amended by the changes, additions, and deletions set forth herein.
- B. The 2010 California Electrical Code, with the changes, additions, and deletions set forth in this chapter and in other chapters of this title is adopted by this reference as though fully set forth.
- C. At least one copy of this electrical code is now on file with the Building Inspection Department, and the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- D. As of the effective date of the ordinance, codified in this chapter, the provisions of the electrical code are controlling and enforceable within the city.
- E. The purpose of this chapter is the practical safeguarding of persons and property, and of buildings and their contents, from hazards arising from the use or generation of electricity for light, heat, power, radio, television, signaling and other purposes.

15.12.020 - Branch circuits.

- A. Section 210.19 of CEC Article 210 (Branch Circuits) is amended by deleting the fourth FPN, and the following is added after the last sentence of Section 210-19(A)(1) to read:

Conductors for branch circuits as defined in Article 100 shall be sized to prevent a voltage drop exceeding 3 percent at the farthest outlet of power, heating and lighting loads, or combinations of such loads, and the maximum total voltage drop on both feeders and branch circuits to the farthest outlet shall not exceed 5 percent.
- B. Section 210.70 of CEC Article 210 (Branch Circuits) is amended by adding the following after the last sentence of Section 210.70(A)(2) to read:

Approved numbers or addresses as required by Section 501.2 of CBC Chapter 5 (as amended) shall be illuminated for new residential occupancies.
- C. Section 210.70 of CEC Article 210 (Branch Circuits) is amended by adding the following after the last sentence of Section 210.70(C) to read:

Industrial and Commercial Occupancies. Outdoor lighting outlets for illumination shall be installed at entrances and exits to buildings intended for industrial or commercial occupancies.

15.12.030 - Authorization.

The City Building Official is authorized to inspect all electrical equipment and work, including electrical equipment and work that is listed in CEC Section 90.2(B)(4) and CEC Section 90.2(B)(5) but is otherwise not covered by the CEC. When the City Building Official finds any electrical equipment to be dangerous or unsafe, the Building Official will so notify the person owning, using or operating it, who shall make the repairs or changes required to make the equipment safe, and complete this work within ten days after notice or such further time as the City Building Official may set. Any electrical system deemed an immediate, imminent hazard to life and property shall be de-energized immediately by the owner, his or her representative or the City Building Official.

15.12.040 - Approved equipment.

- A. When obtainable, electrical equipment that an approved testing laboratory has examined, listed or labeled as conforming to applicable standards shall be used in preference to others.
- B. Listing or labeling conforming to the Standards of the Underwriters' Laboratories, Inc., the United States Bureau of Standards, the United States Bureau of Mines, or other similar institutions of recognized standing shall be prima facie evidence of conformity with the requirements of this section. The maker's name, trademark, or other identification symbol shall be placed on all electrical equipment used or installed under this title.
- C. Old or used electrical equipment shall not be used in any work under this title without the specific approval of the City Building Official.

15.12.050 - Moved buildings.

Electrical systems that are part of buildings or structures moved into this jurisdiction shall comply with the provisions of this code for new buildings.

15.12.060 - Application of Chapters 2, 3, and 5, Division 1, Title 25, C.C.R.

Electrical work in mobile home parks and campgrounds shall comply with Chapters 2, 3, and 5 of Division 1 of Title 25 of the California Code of Regulations.

15.12.070 - Connections to installations.

- A. City Building Official's Approval Required. No person shall connect a source of electrical energy, or supply electric service, to any electrical equipment for the installation of which a permit is required without first obtaining the City Building Official's written authorization.
- B. Unlawful Reconnections. No person shall connect a source of electrical energy, or supply electric service, to any electrical equipment which the City Building Official has disconnected or ordered disconnected until the Building Official authorizes in writing its reconnection and use. The City Building Official will notify the serving utility of the order to discontinue use.

15.12.080 - Unlawful wiring, electric fences, warning.

- A. Prohibition. Except as provided in subsection (b), a person may not construct or maintain any spring gun, or any electric wiring device, designated or intended to injure and/or shock animals or persons, or any contrivance or apparatus for that purpose.
- B. Livestock Exception. Persons principally engaged in the business of handling livestock as a primary means of production or income may electrify fences to control or confine livestock upon complying with all the following requirements:
 - 1. Any contrivance or mechanism to control electrical current in such fences shall be listed by an approved testing laboratory, and shall include a suitable interrupting device and such other safety devices to prevent dangerous currents getting on the fence at any time.
 - 2. Any electrical fence to which the public may have access, except cross fences to confine and control livestock, shall be posted with a warning notice containing the following or similar wording: "DANGER. ELECTRIC FENCE" or "DANGER. HIGH VOLTAGE." This notice shall be posted along any such main fence at intervals of not more than 200feet and in letters at least two inches high.

15.12.090 - Power from generators.

- A. All occupancies that have commercially supplied electricity shall connect to the commercial supplier.
- B. Any occupancy that has commercially supplied electricity shall not use a permanent or temporary generator(s), provided that a generator(s) may be used for commercial purposes when authorized by the City Building Official.

15.12.100 - Boat docks.

Whether open or roofed, lighting shall be provided to insure sufficient protective lighting at least two foot candles at all points for pedestrians on the

docks, within covered berths, and on all walkways or ramps to shore and to the nearest access road within or adjacent to the harbor property.

15.12.110 - Public nuisance lighting.

Lighting fixtures shall be so installed, controlled or directed so that the light will not glare or be blinding to pedestrians or vehicular traffic or on adjoining property.

15.12.120 - Time of service.

- A. On alteration jobs requiring a change of service, the service shall be changed and inspected at the frame or rough wiring state.
- B. On swimming pool jobs requiring a change of service, the service shall be changed and completed prior to the approval for pouring or cementing of the pool or steel inspection of the pool cavity.

15.12.130 - Adoption of Chapters 2, 3, and 5, Division 1, Title 25, C.C.R.

- A. Chapter 2 (Mobile Home Parks Act) Chapter 3 (Factory Built Housing) and Chapter 5 (Manufactured Home, Mobile Home and Commercial Coach Registration and Titling) of Title 25 (Housing and Community Development) of the California Code of Regulations (25 C.C.R. 3000 ff and 5000 ff), including future amendments thereto, are adopted by this reference as part of the Orinda Municipal Code as though fully set forth.
- B. One copy each of Chapters 2, 3 and 5 are on file with the Building Inspection Department and the other requirements of Government Code Section 50022.6 have been and shall be complied with.

15.12.140 - PUC generally.

Facilities installed by utilities subject to the jurisdiction of the PUC shall be installed pursuant to the rules, regulations and orders of that commission. This chapter shall not apply to any such facilities except as it relates to utility facilities located in buildings, in which instance, vaults, conduits, pull boxes or other enclosures shall be installed in compliance with this chapter.

15.12.150 - Adoption of high voltage safety orders.

- A. The high voltage safety order of the Division of Industrial Safety of the California Department of Industrial Relations, including future amendments thereto, are adopted by this reference as a part of the Orinda Municipal Code as though fully set forth.
- B. One copy of the high voltage safety orders is on file with the Building Inspection Department and the other requirements of Government Code Section 50022.6 have been and shall be complied with.

15.12.160 - City Building Official.

The City Building Official or his or her duly authorized deputy is charged with enforcement of this chapter.

15.12.170 - Exceptions allowed.

The City Building Official may, for good cause or when the public interest requires, allow exception from this chapter's requirements.

15.12.180 - General safety.

All electrical work shall be performed, and all electrical equipment shall be constructed, installed, protected, operated, repaired, used and maintained in accordance with the requirements of this chapter and in such manner as to be reasonably safe and free from risk of accident or injury to person or property by fire, shock or otherwise. No person shall act contrary to this general regulation or neglect to act as required in this code.

15.12.190 - Inspection of new work.

All electrical systems shall be inspected by the City Building Official or designated deputy to insure compliance with this chapter. No person shall conceal electrical work until it is inspected and written approval to proceed is given.

15.12.200 - Correction notice.

If the City Building Official condemns any electrical work as not in accordance with this chapter, he or she shall give written notice to the person engaged in the work. Within ten days after this notice, or within any reasonable further time that the City Building Official may prescribe, the person doing the work shall change or remove the work or equipment as the City Building Official may require to make it comply fully with this chapter.

15.12.210 - Other violations.

- A. No person shall cover electrical work, or allow it to be covered, to prevent or hinder its inspection, or remove any notice not to cover placed by the City Building Official.
- B. No person shall supply current to an electrical installation or current-consuming device until a certificate of inspection and approval has been issued.

15.12.220 - Notice to inspect.

The person doing electrical work authorized by the permit shall notify the City Building Official orally or in writing that the work is ready for inspection and meets the

requirements of this chapter. The notice shall be given not less than one working day before the work is to be inspected.

15.12.230 - Work completed before inspection.

Before the electrical wiring in any building is installed, inspected, approved or deemed ready for inspection:

- A. All gas, steam, water, sewer, furnace and other piping and tubing which is to be located in any portion of the building in which any of the wiring is located, shall be installed and in place;
- B. The building shall be roofed; and
- C. Wherever any of the wiring is to be concealed, all lathing strips, furring, bridging, backing and headers shall be in place. Thermal insulation shall not be installed until all electrical rough wiring is approved.

15.12.240 - No change after inspection.

- A. After any electrical work has been inspected and approved, no person shall damage or interfere with it without due authority, nor (whether working under authority of the original or of any due permit) in any manner change or alter it without reporting such change or alteration to the City Building Official for reinspection.
- B. After electrical work in, on, or about any building has been inspected and approved, no person shall place any sheet metal, pipe or other metal or within five inches of any electrical conductor or cable or concealed system of wiring, or within two inches of any so-called open wiring, without having been authorized to do so by the City Building Official and then only when such conductors are protected as may be prescribed by the City Building Official.

15.12.250 - Inspection of existing work.

The City Building Official is empowered to inspect all electrical equipment and work including electrical equipment and work that is listed in CEC Sections 90.2(b)(4) and 90.2(b)(5) but is otherwise not covered by CEC. When the City Building Official finds any electrical equipment to be dangerous or unsafe, he or she shall so notify the person owning, using or operating it, who shall make the repairs or changes required to make the equipment safe, and complete this work within ten days after notice or such further time as the City Building Official may set. Any electrical system deemed an immediate, imminent hazard to life and property shall be deenergized immediately by the owner, his or her representative or the City Building Official.

5.12.260 - Unlawful reconnections.

No person shall connect a source of electrical energy, or supply electric service, to any electrical equipment which the City Building Official has disconnected or ordered disconnected until he or she issues a certificate of approval authorizing its reconnection.

and use. The City Building Official shall notify the serving utility of the order to discontinue use.

15.12.270 - Power companies notify City Building Official.

- A. Notice. Whenever in, on, or about any building any person engaged in the distribution or sale of electrical energy shall set, reset, install or reinstall any meter for the measurement of electrical energy, or connect or reconnect to, or supply or service any installation of electrical equipment, or change the nominal voltage of supply or service to any installation of electrical equipment, or shall change any such supply or service from two-wire to three-wire or vice versa, or from single-phase to polyphase or vice versa, or from direct current to alternating current or vice versa, that person shall within two days thereafter, exclusive of Sundays and holidays, give written notice to the City Building Official specifying the location and address of the installation affected.
- B. Thirty-Day Exception. This notice need not be given for work expressly approved by the City Building Official within thirty (30) days after inspection approval.
- C. Authorization Required. No person engaged in the distribution or sale of electrical energy shall connect a distribution system, including windpower generators, or from any live supply or service conductor(s), to any electrical equipment in, on or about any building or cause or allow any energizing of such connections, including windpower or emergency/stand by electrical generation until the City Building Official inspects the electrical equipment and authorizes such connections.
- D. Electrical Permit Required. An electrical permit shall be obtained from the city Building Inspection Department to restore electrical service to any structure that has been without service for ninety (90) days or more. The city Building Inspection Department shall notify the servicing utility that the electrical service equipment and associated wiring has been inspected and approved before electrical service is reinstalled.
- E. Waiver. The City Building Official may, at his or her discretion, temporarily or permanently waive any or all requirements of this chapter by giving written notice of such waiver to all persons involved. He or she may likewise at any time revoke such waiver by similar notice.

15.12.280 - Application.

The requirements of the 2007 California Electrical Code (as modified in Section 15.12.290) apply to all things regulated by this chapter's other requirements.

15.12.290 - 2010 Electrical Code modifications.

The following provisions of the 2010 California Electrical Code are modified as follows:

- A. Article 100 Definitions. The following definition is modified as follows:

"Appliance" Utilization equipment, generally other than industrial, normally built in standardized sizes and types, which is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc., limited to one listed and approved power supply cord with no other flexible cords or unprotected wiring to complete its function.

B. Article 100 Definitions. The following definitions are added as follows:

"Appliance, Fixed" An appliance which is fastened or otherwise secured at a specific location.

"Appliance, Portable" An appliance which is actually moved or can easily be moved from one place to another in normal use.

"Appliance, Stationary" An appliance which is not easily moved from one place to another in normal use.

Chapter 15.16 - PLUMBING CODE

15.16.010 - Adoption.

- A. The plumbing code of the city is the 2010 California Plumbing Code (California Code of Regulations, Title 24, Part 5 as adopted with no changes, additions, or deletions.
- B. The 2010 California Plumbing Code, with the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth.
- C. At least one copy of this plumbing code is now on file with the Building inspection Department, and the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- D. As of the effective date of the ordinance codified in this chapter, the provisions of the plumbing code are controlling and enforceable within the city.

Chapter 15.20 - MECHANICAL CODE

15.20.010 - Adoption.

- A. The mechanical code of the city is the 2010 California Mechanical Code (California Code of Regulations, Title 24, Part 5, as adopted with no changes, additions, or deletions.
- B. The 2010 California Mechanical Code, with the changes, additions, and deletions set forth in this chapter and other chapters of this title is adopted by this reference as though fully set forth.

- C. At least one copy of this mechanical code is now on file with the Building inspection Department, and the other requirements of Government Code Section 50022.6 have been and shall be complied with.
- D. As of the effective date of the ordinance codified in this chapter, the provisions of the mechanical code are controlling and enforceable within the city.

APPENDIX 1

CITY OF ORINDA

FINDINGS JUSTIFYING CHANGES DUE TO LOCAL CONDITIONS

I. Changes or Modifications

Pursuant to California Health and Safety Code section 17958 the City Council of the City of Orinda, in its ordinance adopting the 2010 California Building (Volume I & II), California Residential, California Green Building Standard, Mechanical, Plumbing, Electrical and Fire Codes, changes, modifies, and amends provisions of the California Building Standards Code.

II. Findings

Pursuant to Health & Safety Code sections 17958.5 and 17958.7 the City Council of the City of Orinda finds that changes, modifications, and amendments to the California Building (Volume I & II), California Residential, California Green Building Standard, Mechanical, Plumbing, Electrical and Fire Codes are needed and are reasonably necessary because of certain local climatic, geological, and topographic conditions as described below.

A. Local Geological Conditions

The City of Orinda is located in Seismic Risk Zone 4, which is the worst earthquake area in the United States. Buildings and other structures in Zone 4 can experience major seismic damage. The City of Orinda is in close proximity to numerous earthquake faults including the San Andreas Fault and contains all or portions of the Hayward, Calaveras, Concord, Antioch, Mt. Diablo, and other lesser faults. A 4.1 earthquake with its epicenter in Concord occurred in 1958, and a 5.4 earthquake with its epicenter also in Concord occurred in 1955. The Concord and Antioch faults have a potential for a Richter 6 earthquake and the Hayward and Calaveras faults have the potential for a Richter 7 earthquake. Minor tremblers from seismic activity are not uncommon in the area.

A study released in 1990 by the United States Geological Survey says that there is a 67% chance of another earthquake the size of Loma Prieta during the next 30 years, and that the quake could strike at any time, including today. Scientists, therefore, believe that an earthquake of a magnitude 7 or larger is now twice as likely to happen as to not happen.

An overpass or undercrossing collapse would significantly alter the response route and time for responding emergency equipment. This is due to limited crossings of

the interstate and that in some areas there is only one surface street, which runs parallel to the interstate, which would be congested during a significant emergency.

Earthquakes of the magnitude experienced locally can cause major damage to electrical transmission facilities and to gas and electrical lines in buildings, which in turn start fires throughout the City. The occurrence of multiple fires will quickly deplete existing fire department resources; thereby reducing and/or delaying their response to any given fire.

A major earthquake could severely restrict the response of the Moraga-Orinda Fire District and its capability to control fires involving buildings of wood frame construction, with ordinary roofing materials and flammable exteriors, or with large interior areas not provided with automatic smoke and fire control systems. Also, when buildings not equipped with earthquake structural support move off their foundations, gas pipes may rupture. Fires develop from line ruptures and spread from house to house, causing an extreme demand for fire protection resources. The proximity of large areas within the City to fault traces necessitates adopting stricter structural construction standards.

The area is replete with various soils, which are unstable, clay loam and alluvial fans being predominant. These soil conditions are moderately to severely prone to swelling and shrinking, are plastic, and tend to liquefy.

The ordinance amends the statewide codes by increasing the minimum base shear in certain buildings to a level consistent with the previous building codes. (§ 15.08.080(A)). The ordinance will eliminate the use of unreinforced plain concrete where allowed by the State-wide codes. (§ 15.08.100(D)).

B. Local Topographic Conditions

The city experiences the hot, dry summer weather characteristic of central Contra Costa County. This climate has promoted the growth of native grass lands, chaparral, oaks and other indigenous plant species in the area. Highly combustible dry grass, weeds, and brush are common in the hilly and open space areas adjacent to built-up locations six (6) to eight (8) months of each year. Many of these areas frequently experience wild land fires, which threaten nearby buildings, particularly those with wood roofs, or sidings. This condition can be found throughout the City of Orinda, especially in those developed and developing areas of the City. Earthquake gas fires due to gas line ruptures can ignite grasslands and stress fire district resources.

Throughout the City of Orinda, the topography and development growth has created a network of older, narrow roads. These roads vary from gravel to asphalt surface and vary in percent of slope, many exceeding twenty (20) percent. Several of these roads extend up through the winding passageways in the hills providing access to remote, high value housing subdivisions. The majority of these roads are private with no established maintenance program. During inclement weather, these roads are

subject to rock and mudslides, as well as down trees, obstructing all vehicle traffic. It is anticipated that during an earthquake, several of these roads would be impassable so as to prevent fire protection resources from reaching fires cause by gas line ruptures or other sources.

The City's streets, especially in the hillside areas, tend to be narrow, steep and contain many curves. Residences have been built on long narrow cul-de-sacs or dead end roads and adjacent to grassland and chaparral areas. These areas were once grazed by cattle but now are open areas which are no longer suitable for cattle grazing. Thus, the fuel supply in these areas continues to increase and additional fuel has been introduced into the area by development in the form of flammable vegetation and combustible plants and trees and manmade structures.

The arrangement and location of natural and manmade surface features, including hills, creeks, canals, freeways, housing tracts, commercial development, fire stations, streets and roads, combine to limit feasible response routes for Moraga-Orinda Fire District resources in and to District areas.

The topographic and geologic conditions in the city have not permitted the establishment of an infrastructure which permits adequate fire protection to be provided when new development occurs. It is difficult to widen existing streets to meet present standards. Fire hydrants, especially in the hillside areas, often have less than optimum water pressure levels. The terrain often causes response times for the fire department to exceed minimum standards and makes the physical fighting of a fire more difficult.

Many of the "newer" large buildings and building complexes have building access and landscaping features and designs, which preclude or greatly limit any approach or operational access to them by Fire District vehicles. In addition, the presence of security gates and roads of inadequate width and grades which are too steep for Fire District vehicles adversely affect fire suppression efforts.

When Fire District vehicles cannot gain access to buildings involved with fire, the potential for complete loss is realized. Access problems often result in severely delaying, misdirecting or making impossible fire and smoke control efforts. In existing structures where pitch roofs have been built over an existing roof, smoke detectors should be required to warn residents of smoke and fire before the arrival of fire personnel.

The above local geological and topographical conditions increase the magnitude, exposure, accessibility problems, and fire hazards presented to the City's fire resources. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. Most earthquake fires are created by natural gas developed from gas line ruptures. Hazardous materials, particularly toxic gases, could pose the greatest threat to the largest number, should a significant seismic event occur. Public safety resources would have to be prioritized to mitigate the greatest

threat, and may likely be unavailable for smaller single dwellings that were caused by broken gas lines.

Other variables may tend to intensify the situation:

- The extent of damage to the water system.
- The extents of isolation due to bridge and/or freeway overpass collapse.
- The extent of roadway damage and/or amount of debris blocking the roadways.
- Climatic condition (hot, dry weather with high winds).
- Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours.
- The availability of timely mutual aid or military assistance.
- The large portion of dwellings with wood shake or shingle coverings (both on the roof diaphragm and sides of the dwellings) could result in conflagrations.
- The large number of dwellings that slip off their foundations and rupture gas lines and electrical systems resulting in further conflagrations.

Because many of these factors create traffic congestion and delays in emergency response, provisions to enhance emergency response time such as visible and legible address numbers are necessary in the City of Orinda. (§ 15.08.050.)

C. Local Climatic Conditions

Precipitation ranges from 15 to 24 inches per year with an average of approximately 20 inches per year. Ninety-six (96) percent falls during the months of October through April and four (4) percent from May through September. This is a dry period of at least five (5) months each year. Additionally, the area is subject to occasional drought. Relative humidity remains in the middle range most of the time. It ranges from forty-five (45) to sixty-five (65) percent during spring, summer, fall, and from sixty (60) to ninety (90) percent in the winter. It occasionally falls as low as fifteen (15) percent.

Locally experienced dry periods cause extreme dryness of untreated wood shakes and shingles on buildings and non-irrigated grass, brush and weeds, which are often near buildings with wood roofs and sidings. Such dryness causes these materials to ignite very readily and burn rapidly and intensely. Gas fires due to gas line ruptures can also spark and engulf a single family residence during these dry periods.

Because of dryness, a rapidly burning gas fire or exterior building fire can quickly transfer to other buildings by means of radiation or flying brands, sparks or embers. A small fire can rapidly grow to a magnitude beyond the control capabilities of the Fire District resulting in an excessive fire loss.

Temperatures have been recorded as high as 114° F. Average summer highs are in the 75° - 90° range, with average maximums of 105° F in some areas of the City of Orinda.

High temperatures cause rapid fatigue and heat exhaustion of firefighters, thereby reducing their effectiveness and ability to control large building, wildland fires, and fires caused by gas line ruptures.

Another impact from high temperatures is that combustible building material and non-irrigated weeds, grass and brush are preheated, thus causing these materials to ignite more readily and burn more rapidly and intensely. Additionally, the resultant higher temperature of the atmosphere surrounding the materials reduces the effectiveness of the water being applied to the burning materials. This requires that more water be applied, which in turn requires more fire resources in order to control a fire on a hot day. High temperatures directly contribute to the rapid growth of fires to an intensity and magnitude beyond the control capabilities of the Fire District in the City of Orinda. The change of temperatures throughout the City between very low and extreme highs contributes to a voltage drop in conductors used for power pole lines. This necessitates that voltage drops be considered.

Prevailing winds in many parts of the City of Orinda are from the north or northwest in the afternoons. However, winds are experienced from virtually every direction at one time or another. Velocities can reach fourteen (14) mph to twenty-three (23) mph ranges, gusting to twenty-five (25) to thirty-five (35) mph. Forty (40) mph winds are experienced occasionally and winds up to fifty-five (55) mph have been registered locally. During the winter half of the year, strong, dry, gusty winds from the north move through the area for several days and creating extremely dry conditions.

Winds such as those experienced locally can exacerbate fires, both interior and exterior, to burn and spread rapidly. Fires involving non-irrigated weeds, grass, brush, and fires caused by gas line ruptures can grow to a magnitude and be fanned to intensity beyond the control capabilities of the fire services very quickly even by relatively moderate winds. When such fires are not controlled; they can extend to nearby buildings, particularly those with untreated wood'shakes or shingles.

Winds of the type experienced locally also reduce the effectiveness of exterior water streams used by the Fire District on fires involving large interior areas of buildings, fires which have vented through windows and roofs due to inadequate built-in fire protection and fires involving wood shake and shingle building exteriors. Local winds will continue to be a definite factor toward causing major fire losses to buildings not provided with fire resistive roof and siding materials and buildings with inadequately separated interior areas, or lacking automatic fire protection systems, or lacking proper gas shut-off devices to shut off gas when pipes are ruptured, or lacking proper electrical systems. National statistics frequently cite wind conditions, such as those experienced locally, as a major factor where conflagrations have occurred.

The City Council finds that the climatic and topographic conditions existing in the city require changes and modifications in the codes which are more stringent than the State Fire Marshal's Standards for fire and public safety. The October, 1991 fire storm

which occurred in the Oakland/Berkeley hills was a harbinger of the potential for a similar fire which could occur in the city. Many of the same conditions which contributed to the loss of property and life in that fire exist in the city. In addition, unlike the situation in Oakland/Berkeley, there is a significant amount of ungrazed open space on the surrounding undeveloped hillsides. Either wildfires or house fires could initiate such a firestorm in the city.

The ordinance would require fire sprinklers in all new construction (commercial and residential) and certain construction projects on existing structures, including a change in occupancy classification for non-residential buildings to a higher hazard occupancy. Automatic sprinklers would be required for all new construction regardless of square footage or type of construction. Exceptions are provided for ancillary structures less than 750 square feet and not intended to be used as part of a residency and for systems required to mitigate deficiencies (installed in accordance with requirements as deemed necessary by the fire code official). Existing non-residential buildings which change occupancy classification to a higher hazard occupancy will be required to install an automatic sprinkler system for the entire building. For projects involving additional alterations or remodels of Group R-3 occupancies, an automatic fire sprinkler system shall be provided throughout the R-3 occupancy if one of the following conditions occurs:

1. When the aggregate of the additions, alternations and remodels exceeds 50% of the floor area of an existing building and the total fire area exceeds 3,500 square feet
2. When fire, earthquake or other man-made disaster destroys 50% or greater of the building the entire building shall be protected by an automatic sprinkler system.
3. When two or more building permits are issued in a five year period, after April 12, 2011 where the aggregate of the additions and alterations exceed 50% of the square footage of the building at the time of the first permit and the total fire area exceeds 3,500 square feet.

D. Necessity of More Restrictive Administration

Because of the unique conditions geographic, topographical, and climatic conditions described above, the City Council of the City of Orinda finds it is also reasonably necessary to amend the provisions of Chapter 1 ("Administration") of the 2010 CA Building Code.